

REMARKS

The application has been reviewed in light of the Office Action dated July 26, 2004. Claims 1-48 were pending. Claims 15-20, 22, 23, 25, 26, 28, 29, 31, 32, 34, 35, 37, 38, 40 and 41 were withdrawn by the Patent Office from consideration.

The Office Action states that Applicants' response to the July 26, 2004 Office Action must include an affirmation of the election of claims 1-14, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48. Applicants hereby affirm the election of claims 1-14, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48, with traverse (for the reasons previously stated of record), in response to the Patent Office restriction requirement.

By this Amendment, claims 1-20, 22, 23, 25, 26, 28, 29, 31, 32, 34, 35, 37, 38, 40, 41 and 43 have been canceled, without disclaimer and prejudice to Applicants' right to pursue these claims in one or more divisional or continuation applications, and claims 21, 24, 27, 30, 33, 36, 39, 42, 44 and 47 have been amended to remove dependencies from canceled claims. Therefore, claims 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 are now pending, with claims 21, 44 and 47 being in independent form.

Claims 1-4, 7, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §102(b) as allegedly fully anticipated by European Patent Application No. EP 0717404 to Yamada et al. (hereinafter "Yamada '404"). Claims 1-5, 7, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §102(b) as allegedly fully anticipated by European Patent Application No. EP 0735158 to Ide et al. (hereinafter "Ide '158"). Claims 1, 2, 7, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §102(b) as allegedly fully anticipated by Japanese Patent Application No. JP 03-240590 to Iwasaki et al. (hereinafter "Iwasaki '590"). Claims 1, 2, 7, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §102(b) as

allegedly fully anticipated by Japanese Patent Application No. JP 04-078031 of Iwasaki et al. (hereinafter “Ide ‘031”). Claims 1-5, 7, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by Japanese Patent Application No. JP 11-070737 of Yuzurihara et al. Claims 1-4, 7-11, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §102(a) as allegedly anticipated by Japanese Patent Application No. JP 2002-002116 of Miura et al. (hereinafter “Miura ‘116”). Claims 1-4, 7-11, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent Application No. 6,479,121 to Miura et al. (hereinafter “Miura ‘121”). Claims 1-4, 7-11, 14, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over Yamada ‘404, Ide, Iwasaki ‘590 or Yuzurihara, in view of European Patent Application No. EP 1058249 to Yamada et al. (hereinafter Yamada ‘249). Claims 1-14, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over Yamada ‘404, Ide, Iwasaki ‘590 or Yuzurihara combined with Yamada ‘249, in view of U.S. Patent No. 6,177,166 to Ohno et al., U.S. Patent No. 6,128,273 to Horie et al. or Japanese Patent Application No. 2000-228032 of Tomie et al. Claims 1-4, 14, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over Yamada ‘404, Ide, Iwasaki ‘590 or Yuzurihara , and further in view of U.S. Patent No. 6,609,175 to Ando et al.

By this Amendment, claims 1-20, 22, 23, 25, 26, 28, 29, 31, 32, 34, 35, 37, 38, 40, 41 and 43 have been canceled, without disclaimer and prejudice. Therefore, the rejections are now moot with respect to claims 1-20, 22, 23, 25, 26, 28, 29, 31, 32, 34, 35, 37, 38, 40, 41 and 43.

Applicants have carefully considered the Examiner’s comments and the cited art, and respectfully submit that independent claims 21, 44 and 47 are patentable over the cited art, for at

least the following reasons.

This application is directed to optical recording media which are adapted for repeated read/write/erase operations. Rewritable phase-change optical recording media typically must undergo an initialization process prior to use. The initialization process has a substantial effect on the resulting recording characteristics, such as overwrite capability. Applicants found, through substantial experimentation, that land jitter is at an unacceptable level when the energy density of the output laser power for the initialization is greater than 1000 J/m^2 . The claimed invention of independent claim 21 provides for a rewritable phase-change optical recording medium which is initialized by irradiating the recording medium with a scanning beam spot emitted from a high power semiconductor laser device, wherein an energy density input by the beam spot is equal to, or less than, 1000 J/m^2 .

In addition, recording power also affects write and readout characteristics of a phase-change optical recording medium. For example, when the laser power is too high during recording, damage results to the recording track. Applicants devised an approach which allows the optimum recording power to be selected for a phase-change optical recording medium. The claimed invention of independent claims 44 and 47 provides for storing on a phase-change optical recording medium parameters for selecting, or information corresponding to, an optimum recording power for the phase-change optical recording medium.

The cited art does not disclose or suggest the claimed invention.

Yamada '404, as understood by Applicants, is directed to a sputtering target for a recording layer of a phase-change type optical recording medium which contains a compound or mixture including as constituent elements Ag, In, Te and Sb.

Ide '158, as understood by Applicants, is directed to a sputtering target which contains a target material including as constituent elements Ag, In, Te and Sb.

Iwasaki '590, as understood by Applicants, is directed to use of an alloy of a specific chalcopyrite compound and a specific element, as the main component of a recording layer of a data recording medium.

Ide '031, as understood by Applicants, is directed to a recording layer for an information recording medium wherein the essential component of the recording layer is maintained in a mixed phase state.

Yuzurihara '737, as understood by Applicants, is directed to a recording layer of an optical recording medium including mainly Ag, In, Sb and Te as constituent elements.

Miura '116, as understood by Applicants, is directed to a phase-change type optical information recording medium having a recording layer with a quasistable Sb_3Te phase which does not require initialization.

Miura '121, as understood by Applicants, is directed to a rewritable optical recording medium which does not require initialization.

Yamada '249, as understood by Applicants, is directed to a CD-RW disk having linear recording velocities higher than the quad (CD4x) speed.

Ohno, as understood by Applicants, is directed to an optical information recording medium allegedly adapted for a wide linear velocity and a wide irradiation power range.

Horie, as understood by Applicants, is directed to an optical phase-change type disc which comprises a substrate having a spiral groove or concentric grooves which meander in accordance with a modulation signal.

Tomie, as understood by Applicants, is directed to an optical information recording

medium having a metallic reflecting layer with an Ag alloy obtained by incorporating a specified amount of Cu into Ag and then disposing a sulfur-free organic or inorganic protective layer or an adhesive layer on the metallic reflecting layer.

Ando, as understood by Applicants, is directed to an information recording medium onto which various types of information are recorded continuously, without logical intermission.

Applicants do not find teaching or suggestion in the cited art, however, of a rewritable phase-change optical recording medium which is initialized by irradiating the recording medium with a scanning beam spot emitted from a high power semiconductor laser device, wherein an energy density input by the beam spot is equal to, or less than, 1000 J/m^2 , as provided by the claimed invention of independent claim 21.

The Office Action states (a) that the cited art discloses media which have been initialized and (b) that the initialization is equivalent to the claimed invention.

It should be noted, however, that equivalence is not the test of unpatentability under 35 U.S.C. §102 or under 35 U.S.C. §103.

There is simply no teaching or suggestion in the cited references of the advantages of a rewritable phase-change optical recording medium which is initialized using a scanning beam spot, wherein an energy density input by the beam spot is equal to, or less than, 1000 J/m^2 , as provided by the claimed invention of independent claim 21. The cited art does not draw a technical distinction as between a rewritable phase-change optical recording medium initialized with a beam spot of one energy density (for example, equal to, or less than, 1000 J/m^2) versus another medium which is initialized with a beam spot of another energy density (for example, greater than 1000 J/m^2).

In addition, Applicants find no teaching or suggestion in the cited art of a phase-change optical recording medium on which is recorded in advance S and R values, as described in independent claim 44, or a P_t value as described in independent claim 47, corresponding to an optimum recording power for the phase-change optical recording medium.

Accordingly, for at least the above-stated reasons, Applicants respectfully submit that the pending claims are patentable over the cited references.

Claims 1-14, 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 are rejected under the judicially created doctrine of double patenting over claims 1-11 of U.S. Patent No. 6,592,958 to Nakamura et al. since the claims, if allowed, would improperly extend the “right to exclude” already granted in the patent.

By this Amendment, claims 1-20, 22, 23, 25, 26, 28, 29, 31, 32, 34, 35, 37, 38, 40, 41 and 43 have been canceled, without disclaimer and prejudice. Therefore, the rejection is now moot with respect to claims 1-14.

With respect to claims 21, 24, 27, 30, 33, 36, 39, 42 and 44-48, Applicants traverse the rejection.

Claims 1-11 of U.S. Patent No. 6,592,958 simply does not disclose or suggest a rewritable phase-change optical recording medium which is initialized using a scanning beam spot, wherein an energy density input by the beam spot is equal to, or less than, 1000 J/m^2 , as provided by the claimed invention of independent claim 21. Indeed, claims 1-11 of U.S. Patent No. 6,592,958 do not mention initialization at all.

Similarly, claims 1-11 of U.S. Patent No. 6,592,958 fails to disclose or suggest a phase-change optical recording medium on which is recorded in advance S and R values, as described in independent claim 44, or a P_t value as described in independent claim 47, corresponding to an

optimum recording power for the phase-change optical recording medium.

In view of the claim amendments and remarks above, it is submitted that the application is now in condition for allowance.

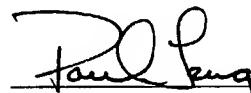
If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition.

The Office is hereby authorized to charge any fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Allowance of this application is respectfully requested.

Respectfully submitted,



Paul Teng, Reg. No. 40,837
Attorney for Applicants
1185 Avenue of the Americas
New York, New York 10036
Cooper & Dunham LLP
Tel.: (212) 278-0400